

# Owen Sound Flight Services

Aerial Work

# Introduction

- Owen Sound Flight Services is authorized to operate in accordance with CARs 702, aerial work.
- The aerial work services that we provide are
  - Aerial survey
  - Aerial photography

# Contents

- (i) training related to contents and requirements of flight manual supplements or airworthiness approvals;
- (ii) pre-flight inspection requirements of aerial work equipment;
- (iii) procedures for handling malfunctions and emergencies related to the aerial work equipment;
- (iv) operational preparation procedures related to reconnaissance of aerial work areas before low level flight operations;
- (v) operational restrictions; and
- (vi) flight training and practice in required flight manoeuvres.

# Flight Manual Supplements

- Pilots will receive training on Aerial work equipment that requires a Supplemental Type Certificate or the addition of flight manual supplements in accordance with the STC and flight manual supplements.
- Training will be provided to all pilots

# Supplemental Type Certificate

- CAR 702.45 states “No air operator shall operate an aircraft carrying an external load unless the attachment device is authorized in a supplemental type certificate (STC) or in an airworthiness approval relating to the operational configuration of the aircraft.”

# What is an STC?

- **Supplemental Type Certificate** A Supplemental Type Certificate (STC) is a document issued by the Federal Aviation Administration approving a product (aircraft, engine, or propeller) modification. The STC defines the product design change, states how the modification affects the existing type design, and lists serial number effectivity. It also identifies the certification basis listing specific regulatory compliance for the design change. Information contained in the certification basis is helpful for those applicants proposing subsequent product modifications and evaluating certification basis compatibility with other STC modifications

# STC

- Any additions, omissions or alterations to the aircraft's certified layout, built-in equipment, airframe and engines, initiated by any party other than the type certificate holder, need an approved supplementary type certificate, or STC. The scope of an STC can be extremely narrow or broad. It could include minor modifications to passenger cabin items or installed instruments. More substantial modifications may involve engine replacement, or a complete role change for the aircraft, such as converting a [B-17](#) or [Stearman](#) into an agricultural aircraft.

# Inspection of Aerial Work Equipment

Pilots will be trained on pre flight inspection requirements of aerial work equipment, in accordance with the Supplemental Type Certificate and/or flight manual supplements

# Malfunctions of Aerial Work Equipment

- The handling of malfunctions and emergencies related to aerial work equipment will be trained in accordance with the Supplemental Type Certificate and flight manual supplements of each specific piece of Aerial Work equipment

# Low Level Operation

## Obstacle Clearance Requirements

- **602.14 (1) [Repealed]**
- **(2)** Except where conducting a take-off, approach or landing or where permitted under [section 602.15](#), no person shall operate an aircraft
- *(a)* over a built-up area or over an open-air assembly of persons unless the aircraft is operated at an altitude from which, in the event of an emergency necessitating an immediate landing, it would be possible to land the aircraft without creating a hazard to persons or property on the surface, and, in any case, at an altitude that is not lower than
  - *(i)* for aeroplanes, 1,000 feet above the highest obstacle located within a horizontal distance of 2,000 feet from the aeroplane,
- *(b)* in circumstances other than those referred to in paragraph *(a)*, at a distance less than 500 feet from any person, vessel, vehicle or structure.

# Low Level Operation

- **602.15 (1)** A person may operate an aircraft at altitudes and distances less than those specified in [subsection 602.14\(2\)](#) where the aircraft is operated at altitudes and distances that are no less than necessary for the purposes of the operation in which the aircraft is engaged, the aircraft is operated without creating a hazard to persons or property on the surface and the aircraft is operated
  - (a) for the purpose of a police operation that is conducted in the service of a police authority;
  - **(b) for the purpose of saving human life;**
  - (c) for fire-fighting or air ambulance operations;
  - **(d) for the purpose of the administration of the *Fisheries Act* or the *Coastal Fisheries Protection Act*;**
  - **(e) for the purpose of the administration of the national or provincial parks; or**
  - (f) for the purpose of flight inspection.

# Low Level Operation

- (2) A person may operate an aircraft, to the extent necessary for the purpose of the operation in which the aircraft is engaged, at altitudes and distances less than those set out in

(a) *N/A to us*

- (b) [paragraph 602.14\(2\)\(b\)](#), where the aircraft is operated without creating a hazard to persons or property on the surface and the aircraft is operated for the purpose of
  - (i) aerial application or **aerial inspection**,
  - (ii) **aerial photography conducted by the holder of an air operator certificate**,
  - (iii) helicopter external load operations, or
  - (iv) flight training conducted by or under the supervision of a qualified flight instructor.

# Low Level Operation

- **Built-up Area and Aerial Work Zone**
- **702.22 (2)** For the purposes of [paragraph 602.15\(2\)\(a\)](#), a person may operate an aircraft over a built-up area at altitudes and distances less than those specified in [paragraph 602.14\(2\)\(a\)](#), if the person
  - (a) has an authorization from the Minister or is authorized to do so in an air operator certificate; and
  - (b) complies with the [Commercial Air Service Standards](#).
- We are not authorized for this section. Therefore over a built up area we must maintain 1,000 feet above the highest obstacle located within a horizontal distance of 2,000 feet from the aeroplane.

# Low Level Operation

- For areas other than a built up area or an open air assembly of persons obstacle clearance is as follows
- No person shall operate an aircraft:
  - CAR 602.14(b)
    - at a distance less than 500 feet from any person, vessel, vehicle or structure.

## UNLESS

- CAR 602.15 outlines certain scenarios where aircraft are allowed to fly below the altitudes specified in CAR 602.14 if certain criteria are met.

# Low Level Operation

- Owen Sound Flight Services operating as a 702 operator will fall under certain criteria in CAR 602.15 (Click back 4 slides), specifically
  - aerial inspection
  - aerial photography conducted by the holder of an air operator certificate
- On occasion
  - for the purpose of saving human life;
  - for the purpose of the administration of the *Fisheries Act* or the *Coastal Fisheries Protection Act*;
  - for the purpose of the administration of the national or provincial parks;

# Low Level Operation

- What this means
- We are authorized to fly over a built up area 1,000 feet above the highest obstacle located within a horizontal distance of 2,000 feet from the aeroplane

# Low Level Operation

- We are authorized to fly over an area other than a built up area or an open air assembly of persons at a distance not less than 500 feet from any person, vessel, vehicle or structure, unless we are conducting:
  - aerial inspection
  - aerial photography conducted by the holder of an air operator certificate
  - for the purpose of saving human life;
  - for the purpose of the administration of the *Fisheries Act* or the *Coastal Fisheries Protection Act*;
  - for the purpose of the administration of the national or provincial parks
- In this case we are authorized to operate at altitudes no less than necessary for the purposes of the operation in which the aircraft is engaged

# Low Level Operation

- "aerial inspection" - means the inspection from an aircraft of crops, forests, livestock or wildlife, the patrolling of pipelines or power lines, a flight inspection or any other operation of a similar nature;
- Low level operations will be those operations conducted within 500 feet from any person, vessel, vehicle or structure

# Low Level Operations

- Before conducting any low level operations, the pilot will be familiar with the aerial work area
- Familiarization will consist of;
  - Reviewing the appropriate maps and charts of the aerial work area (VNC, topographical charts, etc.)
  - Coming up with a minimum safe altitude for all phases of flight that will provide 200 feet vertical clearance above the highest obstacle within 1000 feet horizontally of the aircraft.

# Operational Restrictions

- Maximum window open speed – 160 KIAS
- Except for take off and landing, aerial work operations will not be conducted at an airspeed lower than 60 KIAS
- When conducting aerial work operations at reduced airspeeds, if flaps are being used, maximum speed will not exceed 85 KIAS.

# Aircraft Training

- Training will be given on flight at reduced airspeeds and opening and closing windows in flight. Amendment will be made to our flight training syllabus to include Aerial Work flight training.